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**Graceffo et al.**

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(54) **CONTINUOUS PHASE DELAY ANTENNA**

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See application file for complete search history.

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(52) **U.S. Cl.**

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(57) **ABSTRACT**

Antennas and other transducers for use in transmitting and receiving twisted waves are disclosed. A reflector includes numerous parabolic segments having focal lengths that decrease monotonically with azimuth angle. A feed is used that is located at a focal length associated with one of the segments. Thus, each segment has a phase delay that is related to a difference between the primary focal length and the focal length of the segment. This variation of phase delay with azimuth allows twisted waves to be transmitted and received.

**7 Claims, 8 Drawing Sheets**

